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Date

Susan LaMont
Signature

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

WOLFFE et al.

Serial No.: 10/083,682 Group Art Unit: Unassigned

Filing Date: October 24, 2001 Examiner: Unassigned

Title: DATABASES OF REGULATORY SEQUENCES; METHODS OF MAKING AND USING SAME

SUBMISSION OF FORMAL DRAWINGS

Assistant Commissioner for Patents
Box Issue Fee
Washington, D.C. 20231

Attention: Official Draftsman

Sir:

Enclosed are 20 sheets of formal drawings in connection with the above identified case.

Respectfully submitted,

Date: May 28, 2002

By: Dahna S. Pasternak
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2020902 2852801

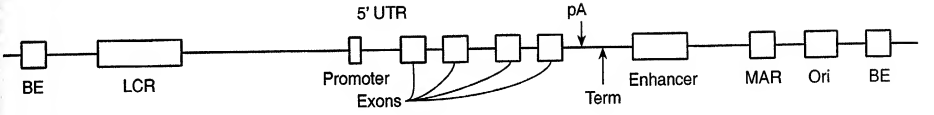


FIG._1

FIG._2A

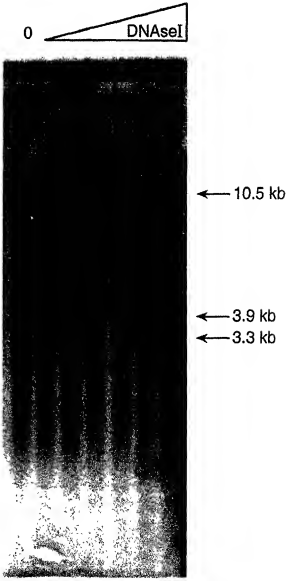


FIG._2B

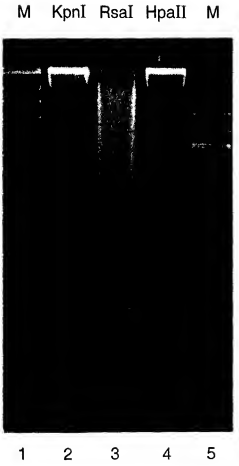


FIG._3

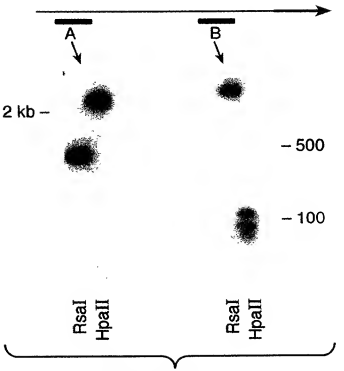

A
B
2 kb –
– 500
– 100
RsaI
HpaII
RsaI
HpaII

FIG._4

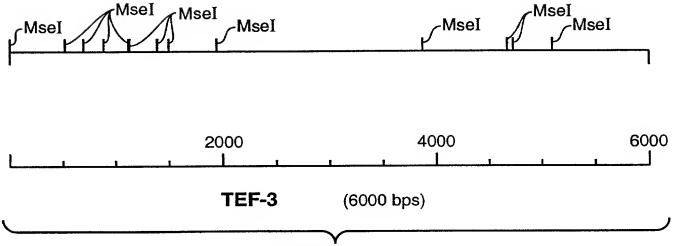

MseI
MseI
MseI
MseI
MseI
MseI
MseI
2000
4000
6000
TEF-3
(6000 bps)

FIG._5

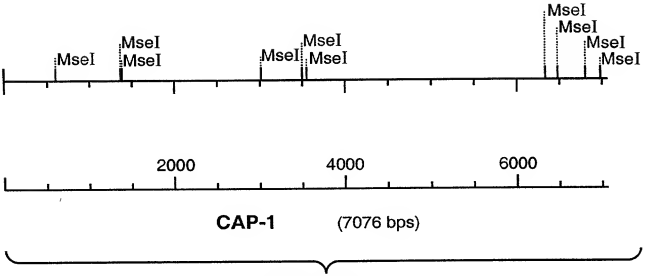

MseI
MseI
MseI
MseI
MseI
MseI
MseI
MseI
MseI
2000
4000
6000
CAP-1
(7076 bps)

FIG._6

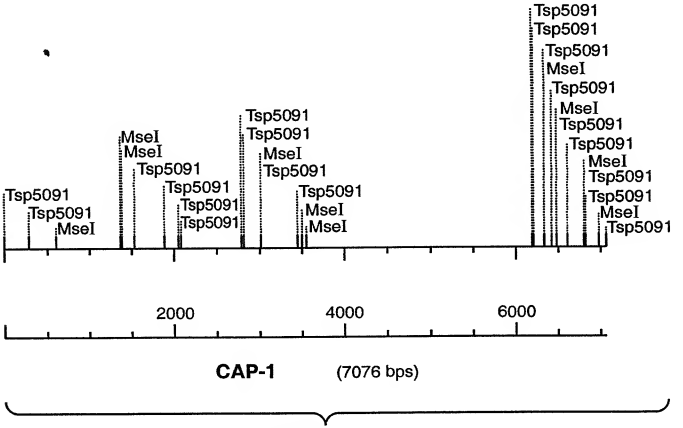

Tsp5091
Tsp5091
Tsp5091
MseI
Tsp5091
MseI
Tsp5091
Tsp5091
MseI
Tsp5091
Tsp5091
MseI
Tsp5091
Tsp5091
MseI
Tsp5091
MseI
Tsp5091
Tsp5091
MseI
Tsp5091
MseI
Tsp5091
Tsp5091
MseI
Tsp5091
MseI
Tsp5091
Tsp5091
MseI
Tsp5091
MseI
Tsp5091
2000
4000
6000
CAP-1
(7076 bps)

FIG._7

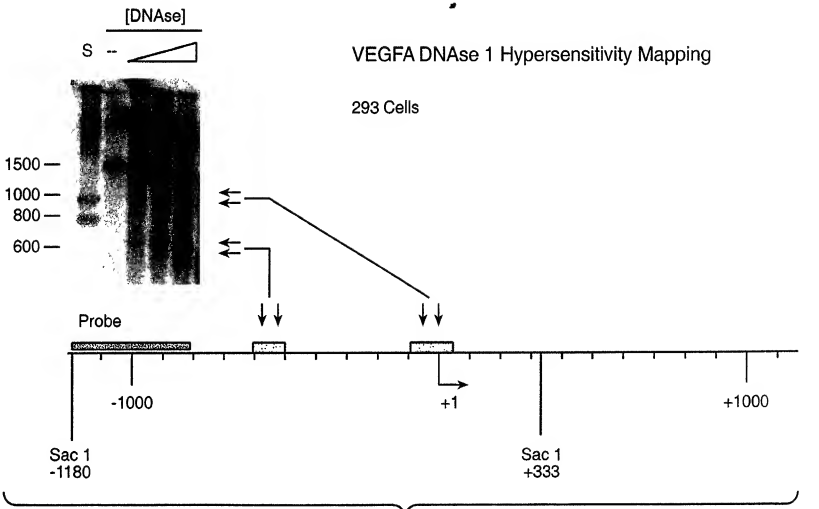

[DNAse]
S --
VEGFA DNAse 1 Hypersensitivity Mapping
293 Cells
1500
1000
800
600
Probe
-1000
+1
+1000
Sac 1
-1180
Sac 1
+333

FIG._8

DNAse 1 Hypersensitivity Mapping of VEGFA

Summary of Results:

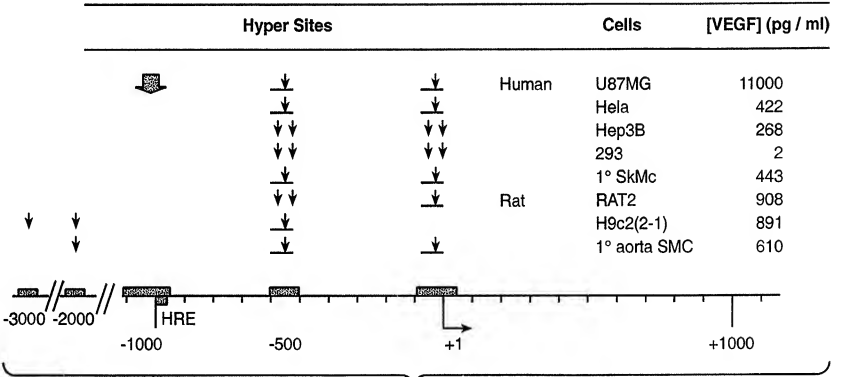
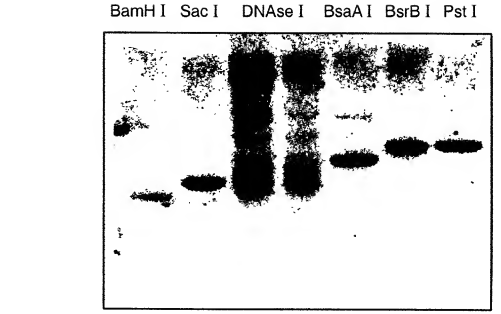


FIG._9


BamH I
Sac I
DNAse I
BsaA I
BsrB I
Pst I

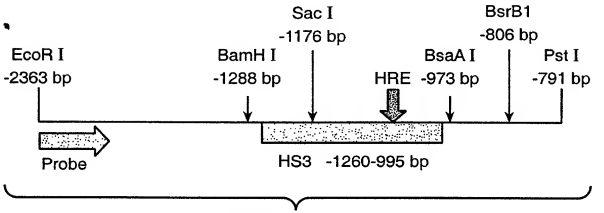

Sac I
-1176 bp
BsrB1
-806 bp
EcoR I
-2363 bp
BamH I
-1288 bp
BsaA I
HRE -973 bp
Pst I
-791 bp
Probe
HS3 -1260-995 bp

FIG._10

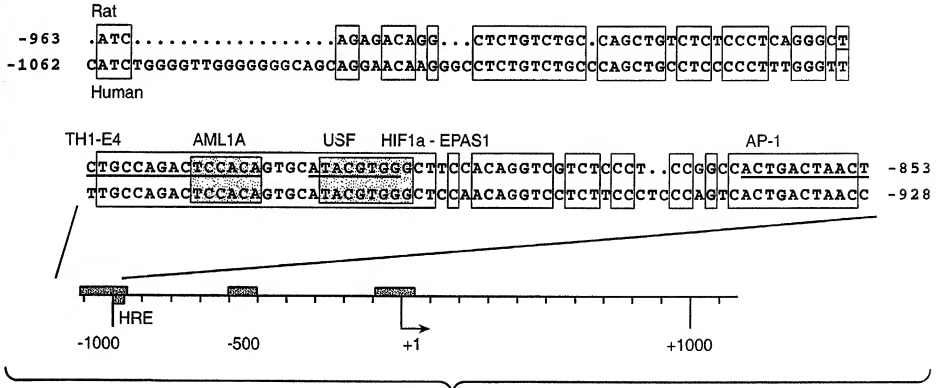

Conserved Regulatory Elements in the '-1000' Accessible Region:
Rat
-963 .ATC.....AGAGACAGG...CTCTGTCTGC.CAGCTGTCTCTCCCTCAGGGCT
-1062 CATCTGGGGTTGGGGGGGCAGCAGGAACAAGGGCCTCTGTCTGCCCAGCTGCCTCCCCCTTGGGTT
Human
TH1-E4
AML1A
USF
HIF1a - EPAS1
AP-1
CTGCCAGACTCCACAGTGCATACGTGGGCTTCCACAGGTCGTCTCCCT..CCGGCCACTGACTAACT -853
TTGCCAGACTCCACAGTGCATACGTGGGCTCCAACAGGTCCTCTTCCCTCCCAGTCACTGACTAACC -928
HRE
-1000
-500
+1
+1000

FIG._11

Stimulatory Ligand
(e.g. TSH)
G-Protein-Coupled
Receptors (e.g. TSHR)
Stimulatory Ligand
(e.g. EGF)
Tyrosine Kinase
Receptors
(e.g. EGFR)
Shc
GRB2
Src-Like
DNAses
p101
p13K
γ
α12/13
GTP
BTK
Family
GDP
αq
GTP
βγ
Rho
GEFs
Rac/ Cdc42
GEFs
Exchange Factors
SOS
Others
rho
rac
cdc42
Small GTP-Binding
Proteins
ras
?
JNK
MAPKinases
ERKs

FIG._12

FIG._13A

FIG._13B

FIG._13C

Ligands
Cytoplasm
Nucleus
Nuclear Receptors
Plasma Membrane Receptors
Growth Factors, Peptide Hormones
JNK
MAPK
PKA
N-CoA
AML-1
Fos
Jun
CREB
CREB
?
?
NR
CREB / Jun
E1A / Fos
p160
CBP / p300

FIG._14

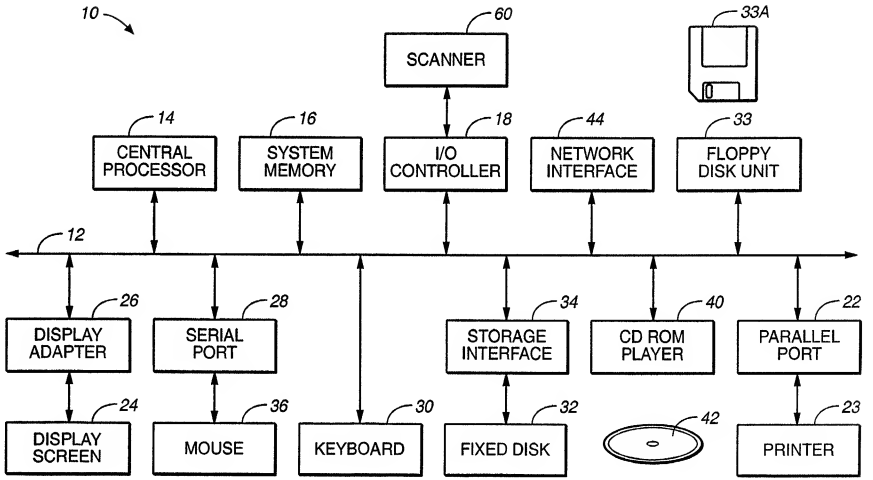

10
60
SCANNER
33A
14
CENTRAL PROCESSOR
16
SYSTEM MEMORY
18
I/O CONTROLLER
44
NETWORK INTERFACE
33
FLOPPY DISK UNIT
12
26
DISPLAY ADAPTER
28
SERIAL PORT
34
STORAGE INTERFACE
40
CD ROM PLAYER
22
PARALLEL PORT
24
DISPLAY SCREEN
36
MOUSE
30
KEYBOARD
32
FIXED DISK
42
23
PRINTER

FIG._15

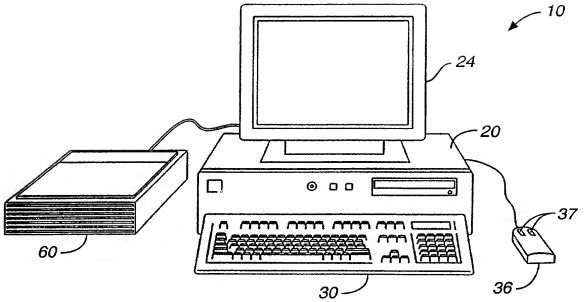

10
24
20
37
60
30
36

FIG._16

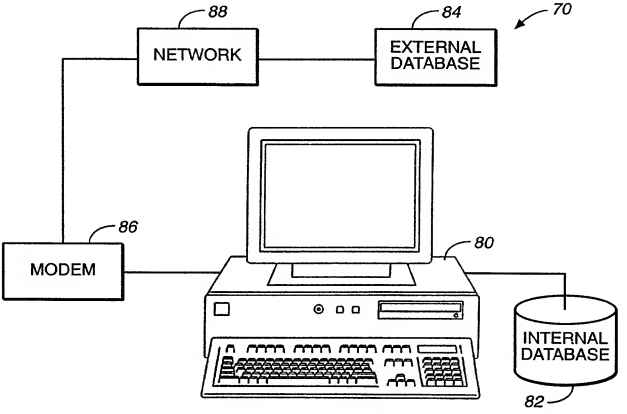

88
84
70
NETWORK
EXTERNAL DATABASE
86
80
MODEM
INTERNAL DATABASE
82

FIG._17

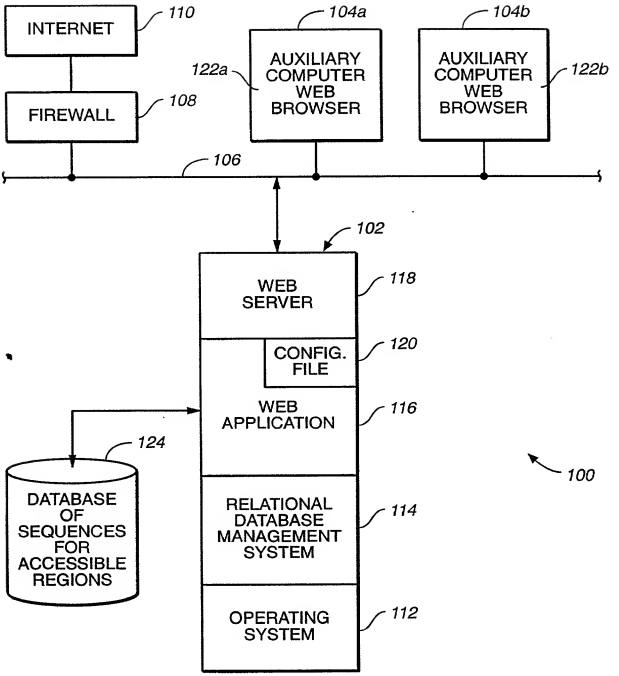

INTERNET
110
FIREWALL
108
104a
AUXILIARY COMPUTER WEB BROWSER
122a
104b
AUXILIARY COMPUTER WEB BROWSER
122b
106
102
WEB SERVER
118
CONFIG. FILE
120
WEB APPLICATION
116
124
DATABASE OF SEQUENCES FOR ACCESSIBLE REGIONS
RELATIONAL DATABASE MANAGEMENT SYSTEM
114
OPERATING SYSTEM
112
100

FIG._18

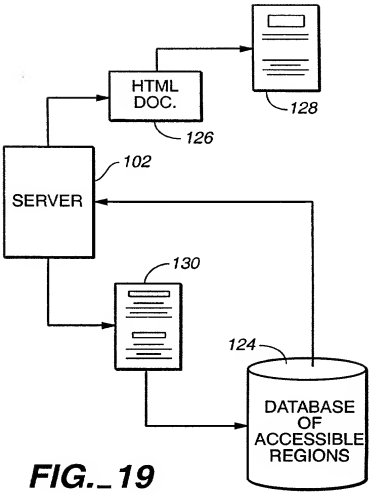

HTML
DOC.
126
128
102
SERVER
130
124
DATABASE
OF
ACCESSIBLE
REGIONS

FIG._19

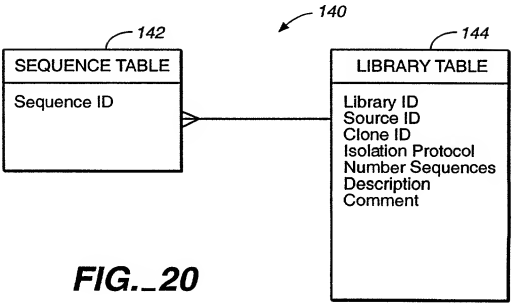

140
142
SEQUENCE TABLE
Sequence ID
144
LIBRARY TABLE
Library ID
Source ID
Clone ID
Isolation Protocol
Number Sequences
Description
Comment

FIG._20

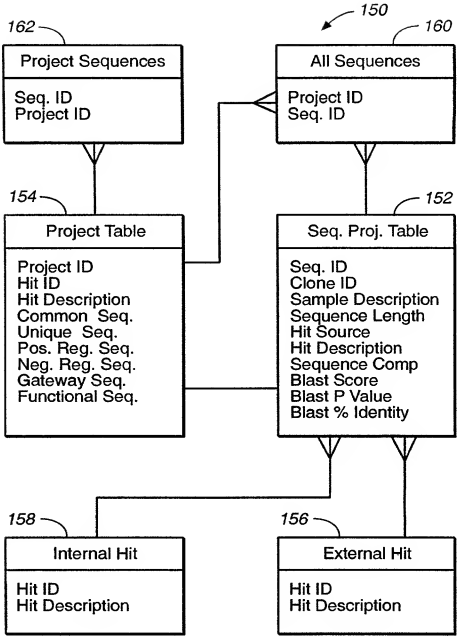

150
162
Project Sequences
Seq. ID
Project ID
160
All Sequences
Project ID
Seq. ID
154
Project Table
Project ID
Hit ID
Hit Description
Common Seq.
Unique Seq.
Pos. Reg. Seq.
Neg. Reg. Seq.
Gateway Seq.
Functional Seq.
152
Seq. Proj. Table
Seq. ID
Clone ID
Sample Description
Sequence Length
Hit Source
Hit Description
Sequence Comp
Blast Score
Blast P Value
Blast % Identity
158
Internal Hit
Hit ID
Hit Description
156
External Hit
Hit ID
Hit Description

FIG._21

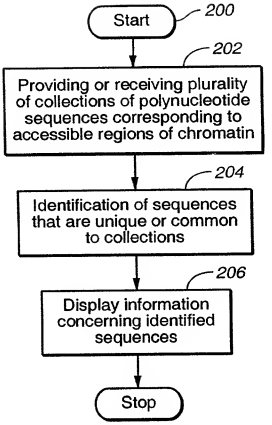


FIG._22

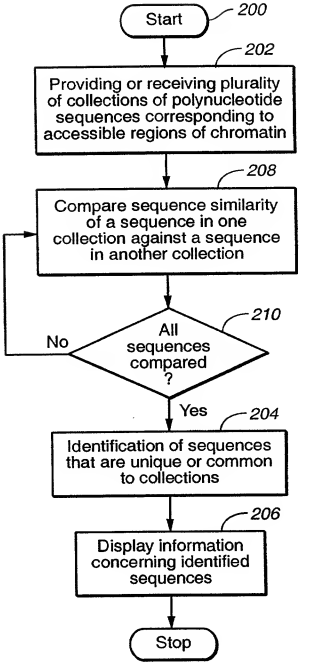


FIG._23

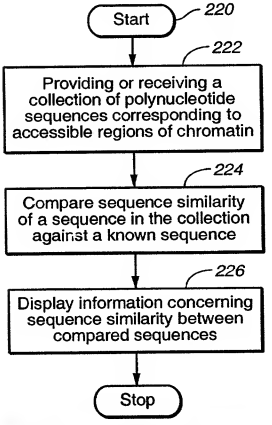


FIG._24

20070928 0825820U

5'-HO-TAGAAGGCACAGTCGAGGACTTATCCTAGCCTCTGAATACTTTCAACAAGTTACACCCTT-P-3'-E(SEQ ID NO: 7)

3'-HO-AAAAAAAATCTTCCGTGTCAGCTCCTGAATAGGATCGGAGACTTATGAAAGTTGTTCAATGTGGGA-OH-5' (SEQ ID NO: 8)

FIG._25

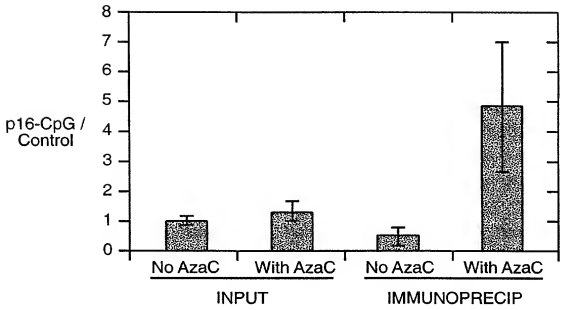

p16-CpG / Control
8
7
6
5
4
3
2
1
0
No AzaC
With AzaC
No AzaC
With AzaC
INPUT
IMMUNOPRECIP

FIG._26

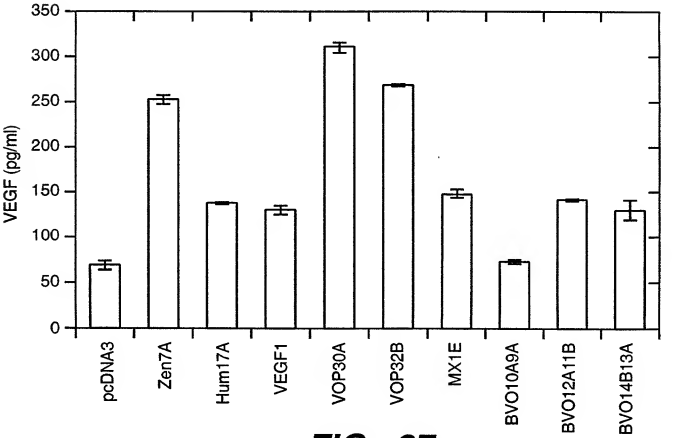

VEGF (pg/ml)
350
300
250
200
150
100
50
0
pcDNA3
Zen7A
Hum17A
VEGF1
VOP30A
VOP32B
MX1E
BVO10A9A
BVO12A11B
BVO14B13A

FIG._27

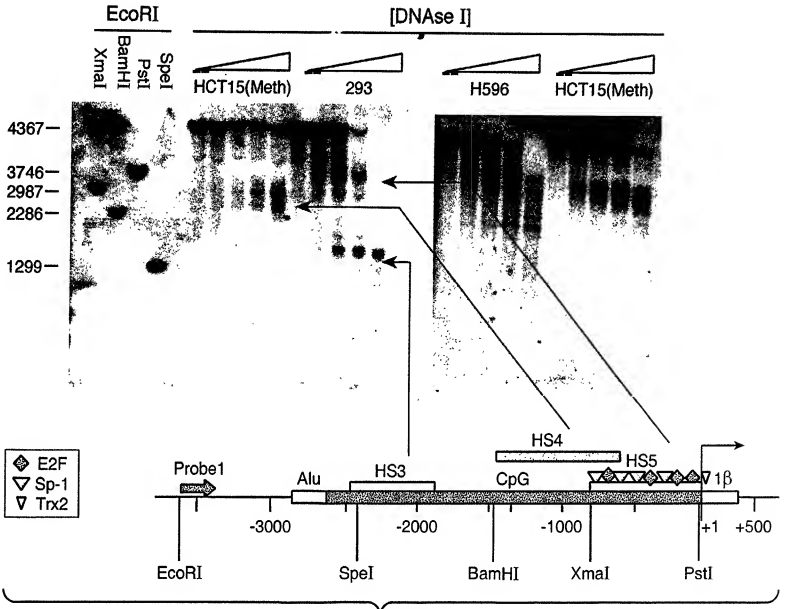

EcoRI
[DNAse I]
XmaI
BamHI
PstI
SpeI
HCT15(Meth)
293
H596
HCT15(Meth)
4367
3746
2987
2286
1299
E2F
Sp-1
Trx2
Probe1
Alu
HS3
HS4
HS5
CpG
1β
-3000
-2000
-1000
+1
+500
EcoRI
SpeI
BamHI
XmaI
PstI

FIG._28